Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In an orthogonal frequency division multiplexing ~~OFDM~~ (OFDM) communication system, a method for frequency synchronizing a second node to a first node, said method comprising:

receiving a series of time domain OFDM bursts from said first node at said second node;

converting said series of time domain OFDM bursts into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values;

determining ~~inter-burst~~ phase differences between ones of said frequency domain OFDM bursts for said selected symbols; and

determining coarse frequency offset between said first node and said second node based on said phase differences.

Claim 2 (original): The method of claim 1 wherein said selected symbols having known transmitted values comprise training symbols used for estimating channel response.

Claim 3 (original): The method of claim 1 wherein at least one of said series of time domain OFDM bursts comprises N time domain symbols, a cyclic prefix that assures orthogonality of OFDM frequency domain subchannels and a supplemental cyclic prefix that causes measurable inter-burst phase differences indicative of frequency offset.

Claim 4 (currently amended): ~~The method of claim 3 further comprising:~~

In an orthogonal frequency division multiplexing (OFDM) communication system, a method for frequency synchronizing a second node to a first node, said method comprising:

receiving a series of time domain OFDM bursts from said first node at said second node;

converting said series of time domain OFDM bursts into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values;

determining inter-burst phase differences for said selected symbols; and

determining coarse frequency offset between said first node and said second node based on said phase differences; and

wherein at least one of said series of time domain OFDM bursts comprises N time domain symbols, a cyclic prefix that assures orthogonality of OFDM frequency domain subchannels and a supplemental cyclic prefix that causes measurable inter-burst phase differences indicative of frequency offset, said method further comprising:

determining fractional symbol width frequency offset based on correlating said supplemental cyclic prefix to a corresponding segment of said N time domain symbols; and

varying a receive frequency of said second node to correct said fractional symbol width frequency offset

Claim 5 (original): The method of claim 4 further comprising:

determining small integer symbol width frequency offset based on positions of said selected symbols having known transmitted values; and

varying said receive frequency to correct said small integer symbol width frequency offset.

Claim 6 (original): The method of claim 1 further comprising:

varying a receive frequency of said second node to correct said coarse frequency offset.

Claim 7 (currently amended): ~~The method of claim 6~~

In an orthogonal frequency division multiplexing (OFDM) communication system, a method for frequency synchronizing a second node to a first node, said method comprising:

receiving a series of time domain OFDM bursts from said first node at said second node;

converting said series of time domain OFDM bursts into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values;

determining inter-burst phase differences for said selected symbols;

determining coarse frequency offset between said first node and said second node based on said phase differences;

varying a receive frequency of said second node to correct said coarse frequency offset; and

wherein said receive frequency is varied to correct said fractional symbol width offset prior to determining small integer symbol width frequency offset and coarse frequency offset.

Claim 8 (currently amended): In an orthogonal frequency division multiplexing ~~OFDM~~ (OFDM) communication system, apparatus for frequency synchronizing a second node to a first node, said apparatus comprising:

a converter that converts a series of time domain OFDM bursts received from said first node at said second node into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values; and

an integer frequency offset estimation block that determines ~~inter-burst~~ phase differences between ones of said frequency domain OFDM bursts for said selected symbols and determines coarse frequency offset between said second node and said second node based on said phase differences.

Claim 9 (original): The apparatus of claim 8 wherein said selected symbols having known transmitted values comprise training symbols used for estimating channel response.

Claim 10 (original): The apparatus of claim 8 wherein at least one of said series of time domain OFDM bursts comprises N time domain symbols, a cyclic prefix that assures orthogonality of OFDM frequency domain subchannels and a supplemental cyclic prefix that causes measurable inter-burst phase differences indicative of frequency offset.

Claim 11 (currently amended): ~~The apparatus of claim 10 further comprising:~~

In an orthogonal frequency division multiplexing (OFDM) communication system, apparatus for frequency synchronizing a second node to a first node, said apparatus comprising:

a converter that converts a series of time domain OFDM bursts received from said first node at said second node into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values; and

an integer frequency offset estimation block that determines inter-burst phase differences for said selected symbols and determines coarse frequency offset between said second node and said second node based on said phase differences; and

wherein at least one of said series of time domain OFDM bursts comprises N time domain symbols, a cyclic prefix that assures orthogonality of OFDM frequency domain subchannels and a supplemental cyclic prefix that causes measurable inter-burst phase differences indicative of frequency offset, said apparatus further comprising:

a fractional frequency offset estimation block that determines fractional symbol width frequency offset based on correlating said supplemental cyclic prefix to a corresponding segment of said N time domain symbols; and

a frequency control block that varies a receive frequency of said second node to correct said fractional tone width frequency offset.

Claim 12 (original): The apparatus of claim 11 wherein said integer frequency offset estimation block determines small integer symbol width frequency offset based on positions of said selected symbols having known transmitted values; and

wherein said frequency control block varies said receive frequency to correct said small integer symbol width frequency offset.

Claim 13 (original): The apparatus of claim 8 further comprising:

a frequency control block that varies a receive frequency of said second node to correct said coarse frequency offset.

Claim 14 (currently amended): ~~The apparatus of claim 13~~ In an orthogonal frequency division multiplexing (OFDM) communication system, apparatus for frequency synchronizing a second node to a first node, said apparatus comprising:

a converter that converts a series of time domain OFDM bursts received from said first node at said second node into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values; and

an integer frequency offset estimation block that determines inter-burst phase differences for said selected symbols and determines coarse frequency offset between said second node and said second node based on said phase differences;

a frequency control block that varies a receive frequency of said second node to correct said coarse frequency offset; and

wherein said receive frequency is varied to correct said fractional ~~symbolwidth~~ symbol width offset prior to determining small integer tone width frequency offset and coarse frequency offset.

Claim 15 (currently amended): In an orthogonal frequency division multiplexing ~~OFDM~~ (OFDM) communication system, apparatus for frequency synchronizing a second node to a first node, said apparatus comprising:

means for receiving a series of time domain OFDM bursts from said first node at said second node;

means for converting said series of time domain OFDM bursts into frequency domain OFDM bursts, said frequency domain OFDM bursts including selected symbols having known transmitted values;

means for determining inter-burst phase differences for said selected symbols; and

means for determining coarse frequency offset between said first node and said second node based on said phase differences.